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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/572,646	03/20/2006	Makoto Sameda	1000023-000102	4737
21839 7590 05/09/2007 BUCHANAN, INGERSOLL & ROONEY PC POST OFFICE BOX 1404 ALEXANDRIA, VA 22313-1404			EXAMINER REDDY, KARUNA P	
			ART UNIT 1713	PAPER NUMBER
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/572,646	<b>Applicant(s)</b> SOMEDA ET AL.	
	<b>Examiner</b> Karuna P. Reddy	<b>Art Unit</b> 1713	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. ____                                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>3/20/2006</u>   | 6) <input type="checkbox"/> Other: ____                           |

## DETAILED ACTION

### *Claim Objections*

1. Claims 1, 4 and 7 are objected to because of the following informalities: Claims 1 and 4 recite, "... which is made by adding (B) ... relative to....". It is not clear as to the component to which (B) is being added. The term "... relative to..." only indicates the proportions of (B) in relation to the resin component. In claim 7, "... from 100°C to the temperature which is the glass transition temperature of the resin plus 150°C .... from 40°C to the temperature which is the glass transition temperature of the resin plus 50°C ." is confusing and the upper limit of the T<sub>g</sub> plus said temperature of 150°C and 40°C would encompass the lower T<sub>g</sub> limit. Claims 2-3 and 8-22 are dependent on claim 1 while claims 5-7 are dependent on claim 4. Appropriate correction is required.

### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.
3. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:
  1. Determining the scope and contents of the prior art.

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2. Ascertaining the differences between the prior art and the claims at issue.
  3. Resolving the level of ordinary skill in the pertinent art.
  4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
4. Claims 1-3, 11-12, 16-17 and 21-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawanishi et al (US 4, 265, 993) in view of Magome et al (US 2001/0028988 A1).

Kawanishi et al disclose a magnetic toner employable as a developer for eletrophotographic system (abstract), where in fine powder of a magnetic material and fixing resin are mixed (column 4, lines 37-40). The magnetic materials have an average particle size from 0.1 to 3 microns. Desirable amounts to be added into the toner composition range from 30 to 75% by weight of the total toner composition (column 4, lines 58-63). Most suitable resins for magnetic toner composition comprises at least one monomer selected from the group comprising styrene, alkyl acrylates in which the alkyl moiety contains from 1 to 12 carbon atoms and alkyl methacrylates in which alkyl moiety contains from 2 to 12 carbon atoms (column 3, lines 33-40). As a fixing resin there may be usable any thermoplastic resins such as homopolymers and copolymers of monomers selected from styrene, acrylonitrile, methacrylonitrile (column 5, lines 11-19). A fixing resin should be added in a toner composition in an amount higher than 20% by weight of toner composition (column 5, lines 42-44). It is desirable to limit the average particle size to within the range from 3 to 30 microns (column 6, lines 9-10). See example for preparing the resins (column

14, line 59) wherein the amount of styrene, n-butyl methacrylate of 580 g and 725 g respectively (column 65-66) read on the % by weight of unsaturated vinyl units of claim 3. The resin has a weight average molecular weight of 38,000 and a glass transition temperature of 70°C (column 15, lines 34-38).

The prior art of Kawanishi is silent with respect to the sphericity of 0.7 to 1 in claim 1 and 30 to 100% by weight of (meth)acrylonitrile in claim 2.

However, Magome et al teach a magnetic toner composition containing at least a binder resin and magnetic material. The magnetic toner particle has a circularity of 0.970 or more (abstract). Furthermore, since the toner has a circularity of as high as 0.970 or more, the magnetic toner can be formed into uniform and fine ears at the developing zone and can perform development faithfully to latent images, bringing about an improvement in image quality (paragraph 0096). The use of such a toner can make its transfer efficiency so high that the transfer residual toner can be reduced (paragraph 0097). Therefore, it would have been obvious to one skilled in the art at the time invention was made to prepare a magnetic toner with high sphericity using the fixing resin and magnetic material of Kawanishi et al and realize the above mentioned advantages.

As to the weight of (meth)acrylonitrile, composition of prior art includes acrylonitrile as one of the vinyl monomers. It is held that where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation. See *In re Antonie*,

559 F.2d 618, 195 USPQ 6 (CCPA 1977). See also *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). See also *Peterson*, 315 F. 3d at 1330, 65 USPQ 2d at 1382 ("The normal desire of scientists or artisans to improve upon what is already generally known provides the motivation or desire to determine where in a disclosed set of percentage ranges is the optimum range of percentages).

Therefore, in the absence of criticality or unexpected results, it would have been obvious to one skilled in the art at the time invention was made to alter the proportions of various vinyl monomers in the polymer of Kawanishi et al in view of Magome et al as a matter of routine optimization and arrive at the instant invention.

5. Claims 4-7, 9-10, 14-15 and 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawanishi et al (US 4, 265, 993) in view of Magome et al (US 2001/0028988 A1) as applied to claims 1-3 above, and further in view of Ozaki et al (JP 05295123 A).

The discussion with respect to Kawanishi et al in view of Magome et al in paragraph 4 is incorporated herein by reference.

The prior art of Kawanishi et al in view of Magome et al differs in the process by which the spherical composite composition is made, utilization in magnetic shield material and electric wave absorption material .

However, Ozaki et al teach a simple procedure for obtaining a composite particle by spray drying a mixture of an emulsion of a polymer having a specific glass transition temperature with a fine metal powder having a specific average

diameter. 100 parts by weight of an emulsion polymer having a glass temperature greater than  $-40^{\circ}\text{C}$  is mixed with 1-300 parts by weight of a metal powder or metal compound having an average particle diameter of 50 microns or smaller (abstract). Spray drying was performed using a two fluid nozzle with an inlet temperature of 80 to  $120^{\circ}\text{C}$  and an outlet temperature of 45 to  $80^{\circ}\text{C}$  (paragraph 0017). This complex particle can be applied to electromagnetic wave shield agent etc (paragraph 0020). Therefore, it would have been obvious to one skilled in the art at the time invention was made to use the simple process taught by Ozaki et al to prepare spherical composition of Kawanishi et al in view of Magome et al because Ozaki et al have proven successfully the preparation of spherical particles that can be used in electromagnetic shield agent by a simple process and one of ordinary skill in the art would expect the process to work for the composition of Kawanishi et al in view of Magome et al and its utilization in magnetic shield agent and electric wave absorption material, motivated by expectation of success.

6. Claims 8, 13 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawanishi et al (US 4, 265, 993) in view of Magome et al (US 2001/0028988 A1) as applied to claims 1-3 above, and further in view of Matsunari et al (US 5, 319, 337).

The discussion with respect to Kawanishi et al in view of Magome et al in paragraph 4 is incorporated herein by reference.

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The prior art Kawanishi et al in view of Magome et al is silent with respect to resin magnet comprising the spherical composite composition.

However, Matsunari et al teach a composite molding of a resin bonded magnet comprising thermoplastic resin and hard ferrite powder (abstract). See example 7 wherein the resin mixture comprises 20% of styrene, 40% of methyl methacrylate, 35% of butyl acrylate and 5% of acrylonitrile. Roll moldings are produced by a process described in examples 3 to 5 i.e. resin mixture of example 7 is mixed with barium ferrite and was kneaded at 120°C in a hot roll mill to obtain a kneaded composition for a thermoplastic resin bonded magnet.

Therefore, it would have been obvious to prepare a resin magnet comprising spherical composition of Kawanishi et al in view of Magome et al because, Matsunari et al has proven successfully the utilization of a mixture of thermoplastic resin and ferrite powder in making a resin magnet and one of ordinary skill in the art would expect the composition of Kawanishi et al in view of Magome to work, motivated by expectation of success.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karuna P. Reddy whose telephone number is (571) 272-6566.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached on (571) 272-1114. The fax

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phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Karuna P Reddy  
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